SUBJECT INDEX

Barotropic flow, bifurcation model 389–99
Bifurcation diagram 392
Biogenic silica distribution 34–6
Brunt-Värsälä frequency 361

Calcium, water column flux 51, 52
Carbon flux
  sediment trap 49
  water column 48
  and zooplankton 48–50
Central California Coast
  cloudiness, low level 128
  forcing mechanisms 123–9
  map 66
  mesoscale variability 67–109
  oceanic variability 61–132
  oceanographic studies 65–7
C-FATE (Composition, flux and transfer experiments) 1
Chemical fluxes 46–53
Coastal trapped waves 371

Drift bottle
  recovery rate 261
  trajectory in Tsushima Strait 255–62

East China Sea
  bottom topography 195
  current direction stability 200, 201
  finite difference grid 181
  Huanghai Warm Current 173
  hydrographic stations 167
  hydrographic survey map 245
  Japan Sea relationship 352–4
  Kuroshio current 193–212
  mean surface currents 194–7
    eddy energy 198, 200
    kinetic energy 197, 198
  summer circulation model 163–76
    vector diagrams 166–70
  surface current tidal fluctuation 193–212
  surge hindcast 184–92
  Taiwan Warm Current 170–4
  temperature distribution 246
  temperature/salinity diagram 247
  tidal currents 209
    hodographs 210
  turbulent surface current
    kinetic energy 197, 199
    polarity 202, 203
  velocity profiles 168–70
  water masses in winter 244–6

East Korea Warm Current 268
  infrared images 269–74
Echo sounding records
  interpretation 30, 31
  Panama basin 28, 32
Eutrophic zone pigments, Panama basin 21–3

Fecal matter
  abundance and volume 13
  chemical fluxes 16
  fluxes 14, 15, 43–5
  particle volume distributions 40
  sizes 11
  vertical distributions 47
  water column distribution 39–42
Fish distribution, Panama basin 24–8
Flux models, fecal matter 11–16
Forcing mechanisms
  Ekman transport 126–9
  geostrophic and coastal 125
  Rossby Wave dispersion 126–9
  winds 123–6

Galápagos Islands
  oxygen sections 138–41
    El Niño 142–8
  salinity sections 138–41
    El Niño 142–8
  temperature sections 138–41
    El Niño 142–8
Genkai Sea
  coastal current 280–9
    seasonal change 283, 284
  mixed layer depth 285, 286
  temperature profiles 288
  wind stress 284
Geostrophic flow, Point Sur 98–102
  cross-shore profiles 98, 100
  dynamic height 99
  vertical resolution 98, 101

Hwanghae *see* Yellow Sea
Hwanghae Cold Water 229
  summer circulation 239
  vertical sections 232, 234
Hwanghae Warm Current Water 229
  eastward turning 250
  summer characteristics 243–53
  summer circulation 238, 243–53
  temperature and salinity 248, 249, 251–3
  water characteristics 247–50
Hydrodynamic drags 375
  calculation 278

Japan Sea
bottom topography 298, 299
deep water density 314
East China Sea relationship 352–4
enstrophy 305
features 313
hydrography 315, 316
deep stations 332
stations 317
kinetic energy time change 305
surface temperatures 268
temperature variations 337–57
analysis 340
data availability 340, 341
stations 338, 339
sudden cooling 341–4
year-to-year 345–51
volume transport pattern 303
wind-driven circulation 297–311
wind stress and curl 302
seasonal 306, 307, 309
Japan Sea Proper Water 313–35, 337
deep water properties 331–4
depths and density 325, 327, 328
description 316–23
discontinuous 317, 319
lateral mixing 329
oxygen 330
properties 320–3
temperature, salinity and density distribution 318–23

Kuroshio Current
scheme, map 193, 194
tidal analysis 204
tidal fluctuations 204–12
hodograph 206, 208

Large Volume *in situ* Filtration System (LVES) 4, 6–11
particle chemistry 7, 9
sample summary 7, 8

Mass fluxes 46–53
Mesoscale variability
California Current, map 66
Central California coast 67–109
MOCNESS (Multiple Opening/Closing Net and Environmental Sensing System) 17
sampling summary 18
Model
diagnostic
components 164–6
summer circulation 163–76
wind stress 165
Japan Sea 298, 299
lumped mass 376, 382
Pollard–Millard 282, 283
rotating laboratory 389–99
storm-surge 178, 179
and observed 190, 191

Moire method 390, 391, 398, 399
Moire strips 394–8

Newmark beta method 379
El Niño, 1982–3
cool phase section data 142–5
hydrographic variability 137
section data 140
thermostad 153–5
vertical displacements 155–7
warm phase section data 145–8
zonal pressure gradient 158, 159
zonal velocity 148–53

Panama Basin
particulate cycle 1–57
suspended particulate matter 22
water column 20–3
biological properties 29
thermal structure 20, 21
Particle flux, temporal variability 45, 46
Particulate cycle
Panama Basin 1–57
rates 3
study methods 3
Particulate matter distribution
and chemistry 33–6
phosphorus : carbon ratios 37–9
Phosphorus : carbon ratios, particulate matter 37–9
Phosphorus, water column flux 51
Phytoplankton 12
Panama basin 32, 33
Point Sur study
coastal wind stress 69, 70
EOF 88, 92, 93
geostrophic flow 98–102
geostrophic velocity 76, 77
mesoscale variability 67–84
MLD 79, 81
pattern correlation profiles 89–91
sampling grids 69, 71
seaward expansion, cool upwelled water 109–12
subsurface temperature (SST) 112–19
annual cycles 119–22
arrival times 116
maps 72, 78, 80
spring transition 115, 118
temperature data analysis 85–98
characteristics 97
components 94–6
spatial autocorrelation 86
temperature and density maps 74, 75
temperature and depth 73, 85, 87
thermocline depth 79, 83, 84
upwelling centre 64
upwelling frontal locus 102–9
AVHRR image 108
extreme values 103
infrared image 102, 104
mean 106, 107

upwelling index 114
winds 68

Satellite infrared imagery
Point Sur 109–12
spring transition, SST 118
Sediment Trap Intercomparison Experiment (STIE) 5, 6
Silica, water column flux 52, 53
Spectral analysis 356
Storm surge calculations 177
meteorological data 180
Subsurface temperatures (SST)
annual variability 120–2
maps 72, 78, 80, 112–19
Surge hindcast 184–92
Suspended matter, Yellow Sea 215–26
calibration curves 217
combustible fraction distribution 222
winter and summer 223
concentrations 220–2
erosion and transport 225, 226
hydrographic regime 218–20
seasonal variations 225, 226
surface and near bottom 221, 224
Synoptic variability 359–73

Temperature correlation calculations 132
Thermostad 153–5
TOPS 148
Tsushima Channel 280–94
heat budget 285
temperature, time-depth section 286
Tsushima Current
branching 265–75
wind-driven circulation 297–311
current-meter deployments 278–80
current and temperature 277–95
drift bottle studies 255–62
method 256, 257
release points 256
East *see also* Genkai Sea
infrared images 268–74
isothermal lines 257, 258
Kuroshio route 354
power spectra 293
speed variation 262
statistics 292
storm response 293–5
summer current observations 289–93
variations 337
volume transport 301
wind roses 259
trajectories 260, 261
Tsushima Strait
features 277, 278
moorings 277, 278

Typhoon
currents 185, 188
vectors 188
surface elevations 184–7
surges, weather map 182
tide–surge interactions 191
tracks 280
wind stress 183

Underwater lines 375–87
buoy system 381
change at deployment 383
rope tension 383, 384

Vertical displacements and El Niño 155–7
Vorticity equation 300

Wakasa Bay
coastal trapped waves 371, 372
current development 368–70
current, vector time fields 369
sampling stations 360
sigma-t fields 367
synoptic variability 359–73
temperature–salinity observations 361–8
wind effects 370

Yangtse River diluted water, temperature/salinity diagram 247
Yellow Sea *see also* Hwanghae
cold coastal water 231
map 216
salinity distribution 232, 233, 236, 237, 240
sea surface temperature 231, 232
summer hydrography 229–42
scheme 238–41
suspended matter 215–26
total (TSM) 217–19
temperature distribution 232, 233, 236, 237
temperature/salinity diagrams 230, 236

Zonal pressure gradient 158, 159
Zonal velocity
El Niño 148–53
profiles, TOPS measurements 152
Zooplankton
abundance 19
carbon flux gradient 50, 51
day and night 25–8
Panama basin 24–8
particle distribution 32, 33
sampling 17